

into 1-chloro-1,3,3,3-tetrafluoropropane (HCFC-244fa) and 1,1,1,3,3-pentafluoropropane (HFC-245fa), followed by the dehydrochlorination of HCFC-244fa and dehydrofluorination of HFC-245fa. This process is not suggested by a combination of E1 and F2.

In one aspect of the invention, step (b) proceeds by a caustic step, thus:

1. A process for the manufacture of 1,3,3,3-tetrafluoropropene comprising :
 - a) reacting 1-chloro-3,3,3-trifluoropropene with hydrogen fluoride in a reactor in the vapor phase and in the presence of a fluorination catalyst and under conditions sufficient to form an intermediate product which comprises 1-chloro-1,3,3,3-tetrafluoropropane and/or 1,1,1,3,3-pentafluoropropane; and
 - b) reacting said intermediate product with a caustic solution and under conditions sufficient to dehydrochlorinate 1-chloro-1,3,3,3-tetrafluoropropane and/or to dehydrofluorinate 1,1,1,3,3-pentafluoropropane, forming a reaction product which comprises 1,3,3,3-tetrafluoropropene.

In another aspect of the invention, step (b) proceeds by a thermal decomposing step, thus:

22. A process for the manufacture of 1,3,3,3-tetrafluoropropene comprising :
 - a) reacting 1-chloro-3,3,3-trifluoropropene with hydrogen fluoride in a reactor in the vapor phase and in the presence of a fluorination catalyst and under conditions sufficient to form

an intermediate product which comprises 1-chloro-1,3,3,3-tetrafluoropropane and/or 1,1,1,3,3-pentafluoropropane; and

b) thermally decomposing said intermediate product under conditions sufficient to dehydrochlorinate 1-chloro-1,3,3,3-tetrafluoropropane and/or to dehydrofluorinate 1,1,1,3,3-pentafluoropropane, forming 1,3,3,3-tetrafluoropropene.

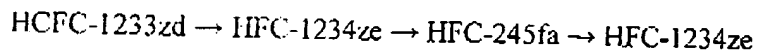
In each of these claim aspects, the goal of the invention is the production of HFC-1234ze. E1 does not have the production of HFC-1234ze as a goal. Rather it solely seeks to produce HFC-245fa. In fact, E1, first converts reacts HCFC-1233zd under conditions sufficient to form an intermediate admixture comprising HFC-1234ze, and then converts the HFC-1234ze into HFC-245fa. This is directly opposite to step (a) of the present invention where the Applicant first converts reacts HCFC-1233zd under conditions sufficient to form an intermediate admixture comprising HFC-245fa and then converts the HFC-245fa into HFC-1234ze in a subsequent step (b). The examiner then combines E1 with E2 to show a conversion of HFC-245fa into HFC-1234ze via a solution of potassium, sodium, calcium, or magnesium hydroxide.

It is submitted that this analysis involves an impermissible reconstruction of the art in light of the applicant's disclosure.

Nowhere in either reference is step (a) of the instant invention shown. Ignoring for the moment the production of HFC-244fa, step (a) is conducted by reacting HCFC-1233zd with hydrogen fluoride in a reactor in the vapor phase and in the presence of a fluorination

catalyst and *under conditions sufficient to form HFC-245fa* (which is thereafter reacted in step (b) to produce HFC-1234ze). In contrast, E1 reacts HCFC-1233zd with hydrogen fluoride in a reactor in the vapor phase and in the presence of a fluorination catalyst and *under conditions sufficient to form* a mixture which primarily contains *HFC-1234ze*. This HFC-1234ze is thereafter converted into HFC-245fa. Obviously the applicant's conditions, which produces HFC-245fa would be different from E1's conditions which produce HFC-1234ze.

It is submitted that one skilled in the art would not be motivated to combine E1 with E2 to ultimately produce HFC-1234ze because this combination would require multiple conversions. That is, a hypothetical combination of E1 and E2 would convert



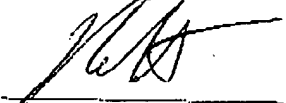
This would be an illogical pathway from HCFC-1233zd to HFC-1234ze. It is therefore submitted that one skilled in the art would not be motivated to combine E1 and E1 in order to obtain HFC-1234ze from HCFC-1233zd. The fact that one *could* obtain HFC-1234ze from HCFC-1233zd from the E1 + E2 hypothetical combination, does not mean that one *should* do so.

It is pointed out that that the Applicants do not claim all pathways of proceeding from HCFC-1233zd to HFC-1234ze. Likewise the Applicants are not claiming the concept of proceeding from HCFC-1233zd to HFC-1234ze. Applicants are claiming a *particular*

technique of proceeding from HCFC-1233zd to HFC-1234ze which is not apparent from a hypothetical combination of E1 and E2. This is at least for the reason that neither E1 nor E2 show step (a) which is conducted by reacting HCFC-1233zd with hydrogen fluoride in a reactor in the vapor phase and in the presence of a fluorination catalyst and *under conditions sufficient to form HFC-245fa* (which is thereafter reacted in step (b) to produce HFC-1234ze). It is further argued that while it may be hypothetically possible to combine E1 and E2, there is no suggestion *from the art itself* that one *should* make such a hypothetical combination. For these reasons it is submitted that the combination of E1 and E2 does not suggest the instant invention.

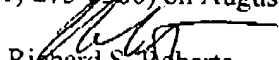
The undersigned respectfully requests re-examination of this application and believes it is now in condition for allowance. Such action is requested. If the examiner believes there is any matter which prevents allowance of the present application, it is requested that the undersigned be contacted to arrange for an interview which may expedite prosecution.

Respectfully submitted,



Richard S. Roberts
Reg. No. 27,941
P.O. Box 484
Princeton, New Jersey 08542
(609) 921-3500
Date: August 15, 2005

I hereby certify that this paper is being facsimile transmitted to the United States Patent and Trademark Office (FAX No. (571) 273-8300) on August 15, 2005.



Richard S. Roberts
Reg. No. 27,941